

What is claimed is:

1. A microporous filtration membrane, comprising:
a first membrane element that includes a first porous prefilter region and a
5 first porous qualifying region; and
a second membrane element that includes a second porous prefilter region
and a second porous qualifying region;
wherein said first membrane element and said second membrane element
are laminated to each other such that said first qualifying region is in a side-by-side
10 relation with said second qualifying region.
2. A microporous filtration membrane, comprising:
a first membrane element that includes a first porous prefilter region and a
first porous qualifying region; and
a second membrane element that includes a second porous prefilter region
15 and a second porous qualifying region;
wherein said first membrane element and said second membrane element
are positioned in side-by-side orientation relative to each other such that said first
qualifying region is in a side-by-side relation with said second qualifying region.
3. A microporous filtration membrane according to claim 2, wherein
20 said first membrane element and said second membrane element are fabricated from a
nylon.

4. A microporous filtration membrane according to claim 2, wherein said first membrane element and said second membrane element are fabricated from a fluoropolymer.

5. A microporous filtration membrane according to claim 3, wherein
5 said fluoropolymer is polyvinylidene fluoride.

6. A microporous filtration membrane according to claim 2, wherein said first membrane element and said second membrane element are fabricated from polyethersulfone.

7. A microporous filtration membrane according to claim 2, further
10 comprising a first reinforcement layer intermediate said first prefilter region and said first qualifying region, and a second reinforcement layer intermediate said second prefilter region and said second qualifying region.

8. A microporous filtration membrane according to claim 7, wherein said first reinforcement layer and said second reinforcement layer are fabricated on a non-
15 porous support material.

9. A microporous filtration membrane according to claim 8, wherein said non-porous support material is a polyethylene terephthalate film.

10. A microporous filtration membrane according to claim 2, wherein said first porous prefilter region and said first porous qualifying region define a pore size
20 ratio that is about 1.5:1 to about 4:1.

11. A method of fabricating a laminated microporous membrane comprising the steps of:

providing a nonwoven reinforcement material having first and second sides;

impregnating the support material with a first dope on said first side and a second dope on said second side;

5 treating said impregnated support material such that said first dope is phase inverted to define a prefilter layer and said second dope is phase inverted to define a qualifying layer; and

 laminating a first segment of said phase inverted, impregnated support material to a second segment of said phase inverted, impregnated support material such
10 that said qualifying layer of said first segment is in side-by-side relation to said qualifying region of said second segment.

12. The method of claim 11, wherein, said first and second dopes are formulated and phase inverted to produce a pore size ratio between said prefilter layer and said qualifying layer of about 1.5:1 to about 4:1.

15 13. The method of claim 11, further comprising applying a third dope to said impregnated support material.

14. The method of claim 11, further comprising rinsing and washing said phase inverted, impregnated support material prior to said lamination step.

15 15. The method of claim 11, wherein said support material is fabricated
20 from a material selected from the group consisting of polyolefins and polyesters.

16. The method of claim 11, wherein said treatment step comprises quenching said impregnated support material.

17. The method of claim 11, wherein said lamination step includes at least one of the following processing steps: (i) pressing said first and second segments together with a nip roller prior to drying, or (ii) placing said first and second segments in intimate contact and processing in a vacuum roll dryer.

5 18. A laminated microporous filtration membrane, comprising:
a first membrane element that includes a first porous prefilter region, a first reinforcement layer, and a first porous qualifying region; and
a second membrane element that includes a second porous prefilter region, a second reinforcement layer, and a second porous qualifying region;

10 wherein said first membrane element and said second membrane element are laminated to each other along a lamination plane such that said first qualifying region is in a side-by-side relation with said second qualifying region.

19. A laminated microporous filtration membrane, comprising:
a first membrane element that includes a first porous prefilter region and a
15 first porous qualifying region; and

a second membrane element that includes a second porous qualifying region;

wherein said first membrane element and said second membrane element are laminated to each other such that said first qualifying region is in a side-by-side
20 relation with said second qualifying region.

20. A microporous filtration membrane, comprising:
- a first membrane element that includes a first porous prefilter region and a first porous qualifying region; and
- a second membrane element that includes a second porous prefilter region
- 5 and a second porous qualifying region;
- wherein said first membrane element and said second membrane element are adjoined, but not laminated, to each other such that said first qualifying region is in a side-by-side relation with said second qualifying region.